

Work Order ID 100121

100121

Page 1

April 18, 2013 9:52:39 AM

Item ID: D2962-190

Accept

N900040100

Setup Start *NS1*

Revision ID:

Stop *NS2*

Item Name: Extrusion

Start Date: 4/18/13 Start Qty: 55.00

55

Cust Item ID:

Required Date: 5/06/13 Req'd Qty: 55.00

55

Customer:

Reference:

Run Start *NR1*

Approvals: Process Plan: *CL*

Date: 13/04/18 Tooling:

Date:

Stop *NP2*

Date: SPC (Y/N):

Date:

| Work Center | Description | Unit | Qty | Repl. Number | Stamp |
|-------------|-------------|------|-----|--------------|-------|
|-------------|-------------|------|-----|--------------|-------|

Draw Nbr

Revision Nbr

D2962

Rev A

100

0.00

100

PURCHASING

Purchasing

Memo

0.00

Purchasing

Issue P/O: *19621*

a) Extrude as per Dwg D2962

b) Material: 6061-T6 (QQ-A-200/8)

c) Minimum yield tensile strength = 35 ksi

d) Minimum ultimate tensile strength = 40 ksi

e) Minimum elongation = 8%

f) Order at 190" long

g) Bon L Canada Inc. tool #

110

Receive & Inspect for Damage & Mat'l Certs

0.00

110

Packaging

Memo

0.00

Packaging

Ensure material certification is attached

PL 13-04-18

4/13/20 CC

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | | | | | | | | | | | |
|--|------|------|-----|---|----------------------|---|----------------|--------------|--------------|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector | | |
| Doc/Data | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | |
| Operator | | | | | | | | | | | |
| Material | | | | | | | | | | | |
| Setup | | | | | | | | | | | |
| Other | | | | | | | | | | | |
| Process | | | | | | | | | | | |
| Supplier | | | | | | | | | | | |
| Training | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | |

| FAULT CATEGORY | | | |
|---|---|---|---|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions | <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |

Work Order ID 100121

100121

Page 2

April 18, 2013 9:52:39 AM

Item ID: D2962-190

Accept

N900040100

Setup Start

NS1

Revision ID:

Item Name: Extrusion

Stop

NS2

Start Date: 4/18/13 Start Qty: 55.00

55

Cust Item ID:

Required Date: 5/06/13 Req'd Qty: 55.00

55

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID:
Work Center ID:

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

120

QC6- Inspect dimensions to drawing

0.00

DAS
16

120

QC

Memo

0.00

Quality Control

Check Pull test per Dwg D2962 for compliance page attached. Check hardness with Webster tester

130

Identify as per dwg & Stock Location: Hall 06

0.00

130

Packaging

Pull 20 pcs for cr.

0.00

Memo

Packaging

exp. 4/18/13

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

6043

SAP 130801

13/5/6

13-05-2

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

| | |
|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | DISPOSITION <div style="display: flex; justify-content: space-around;"> <div> <input type="checkbox"/> Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update </div> <div> <input type="checkbox"/> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab </div> <div> <input type="checkbox"/> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite </div> <div> <input type="checkbox"/> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier </div> <div> <input type="checkbox"/> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other </div> </div> |
|--|--|

| Root Cause | Date | Step | Qty | Description of work order update or Non-conformance | Initial Chief Eng | Action Description | Sign & Date | Verification | QC Inspector |
|---------------|------|------|-----|---|-------------------|--------------------|-------------|--------------|--------------|
| Doc/Data | | | | | | | | | |
| Equip/Tooling | | | | | | | | | |
| Operator | | | | | | | | | |
| Material | | | | | | | | | |
| Setup | | | | | | | | | |
| Other | | | | | | | | | |
| Process | | | | | | | | | |
| Supplier | | | | | | | | | |
| Training | | | | | | | | | |
| Unapproved | | | | | | | | | |

FAULT CATEGORY

| | | |
|---|---|--|
| Landing Gear <input type="checkbox"/> Bending <input type="checkbox"/> Centre Not Concentric to O/S <input type="checkbox"/> Cracks <input type="checkbox"/> Crushed/Crimped <input type="checkbox"/> Cuffs <input type="checkbox"/> Heat Treat <input type="checkbox"/> Inspection Strip in Tube <input type="checkbox"/> Ripples in Bend <input type="checkbox"/> Torque Waves in Extrusion <input type="checkbox"/> Turning Sequence <input type="checkbox"/> Wave/Twist in Tube | General <input type="checkbox"/> Bend <input type="checkbox"/> BOM/Route <input type="checkbox"/> Broken/Damaged <input type="checkbox"/> Burrs <input type="checkbox"/> Contamination <input type="checkbox"/> Countersink <input type="checkbox"/> Cut Too Short <input type="checkbox"/> Drill Holes <input type="checkbox"/> Drawing <input type="checkbox"/> Finish <input type="checkbox"/> Folio | <input type="checkbox"/> Grain <input type="checkbox"/> Hardware <input type="checkbox"/> Inspection Incomplete <input type="checkbox"/> Instructions Incomplete/Unclear <input type="checkbox"/> Maintenance <input type="checkbox"/> Mislabeled <input type="checkbox"/> Misread <input type="checkbox"/> Offset <input type="checkbox"/> Out of Calibration <input type="checkbox"/> Out of Sequence <input type="checkbox"/> Outside Dimensions <input type="checkbox"/> Ovalized <input type="checkbox"/> Over/Under tolerance <input type="checkbox"/> Part Incorrect <input type="checkbox"/> Part Lost/Missing <input type="checkbox"/> Part Moved <input type="checkbox"/> Positioned Wrong <input type="checkbox"/> Power Loss/Surge <input type="checkbox"/> Pressure/Forced <input type="checkbox"/> Temperature/Cure <input type="checkbox"/> Weld <input type="checkbox"/> Wrong Stock Pulled <input type="checkbox"/> Other |
|---|---|--|

Picklist Print

April 18, 2013 9:52:38 AM

Page 1

Work Order ID: 100121
Parent Item: D2962-190
Parent Item Name: Extrusion

Start Date: 4/18/13
Start Qty: 55.00

Required Date: 5/06/13
Required Qty: 55.00

Comments: IPP REV:A 13.04.17 NEW ISSUE DD VERF:JLM

| Component Item ID/ Item Name | Replacement Item ID | Mfg/ Purch | Bin Item | Primary Location | Last Location | Route Seq ID | Unit of Measure | Qty on Hand | Qty per Kit | Total Qty | Qty Issued | Date Issued | Status |
|---------------------------------|------------------------|---------------|-------------|---------------------|------------------|-----------------|--------------------|----------------|-------------|--------------|---------------|----------------|--------|
| D2962-190P Extrusion | | Purchased | No | | | | Each | 0.0000 | | 55 | | | |

4/30/13 GG

NCR: Yes / No

WORK ORDER NON-CONFORMANCE / UPDATE

DQA: _____ Date: _____

QA Closed: _____ Date: _____

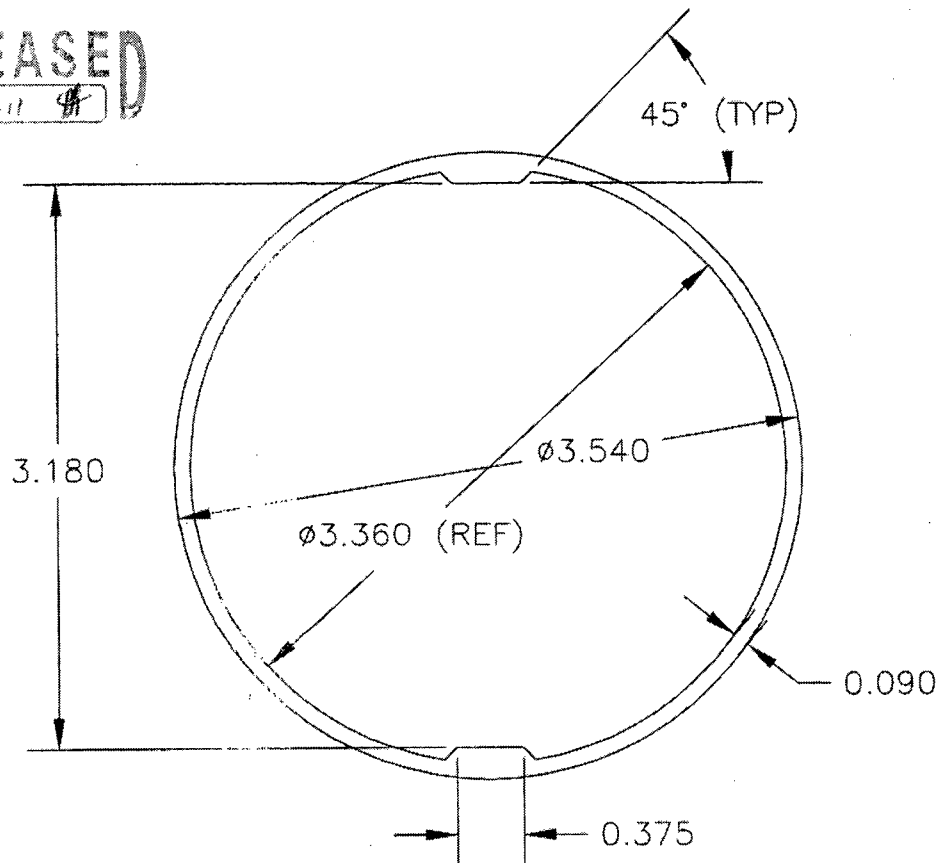
| | | | | | | | | | | | |
|--|------|------|-----|---|-------------------|---|-------------|--------------|--------------|--|--|
| Work Order: _____ Part No. _____ NCR No. _____ | | | | DISPOSITION Rework <input type="checkbox"/> Scrap <input type="checkbox"/> Use-as-is <input type="checkbox"/> Work Order Update <input type="checkbox"/> | | AGAINST DEPARTMENT/PROCESS <div style="display: flex; justify-content: space-between;"> <div> Skid-tube <input type="checkbox"/> Machining <input type="checkbox"/> Thermoforming <input type="checkbox"/> Large Fab <input type="checkbox"/> </div> <div> Crosstube <input type="checkbox"/> Small Fab <input type="checkbox"/> Finishing <input type="checkbox"/> Composite <input type="checkbox"/> </div> <div> Water Jet <input type="checkbox"/> Prod. Eng. Coord. <input type="checkbox"/> Rec/Store/Packaging <input type="checkbox"/> Supplier <input type="checkbox"/> </div> <div> Engineering <input type="checkbox"/> Quality <input type="checkbox"/> Other <input type="checkbox"/> </div> </div> | | | | | |
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| Doc/Data | | | | | | | | | | | |
| Equip/Tooling | | | | | | | | | | | |
| Operator | | | | | | | | | | | |
| Material | | | | | | | | | | | |
| Setup | | | | | | | | | | | |
| Other | | | | | | | | | | | |
| Process | | | | | | | | | | | |
| Supplier | | | | | | | | | | | |
| Training | | | | | | | | | | | |
| Unapproved | | | | | | | | | | | |

| FAULT CATEGORY | | | |
|---|---|---|---|
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| | | | |
|------------------------|-------------------------|--|------------------------|
| DESIGN RF | DRAWN BY RF | DART AEROSPACE USA, INC. BELLEVUE, WA | |
| CHECKED [Signature] | APPROVED [Signature] | DRAWING NO. D2962 | REV. A SHEET 1 OF 1 |
| DATE 00.03.10 | | TITLE EXTRUSION | SCALE 1:1 |
| A | 00.03.10 | NEW ISSUE | |

RELEASED
00.05.11 [Signature]



CY 13/04/18
W10.100121

GENERAL NOTES

1. MANUFACTURED USING SON L CANADA DIE # TBB- DAA-897127
2. ORDER AS D2962-XXX WHERE XXX = LENGTH IN INCHES
EG. 125 LONG: D2962-125
3. MATERIAL: 6061-T6 (A-200/8)
MINIMUM YIELD TENSILE STRENGTH = 35 ksi
MINIMUM ULTIMATE TENSILE STRENGTH = 40 ksi
MINIMUM ELONGATION = 8 %

A SAMPLE FROM EACH BATCH WILL BE PULL TESTED TO ASTM STANDARD B221 BY AN APPROVED TESTING FACILITY TO ENSURE THAT THE BATCH MEETS THE ABOVE MINIMUM MECHANICAL PROPERTIES.

4. BREAK ALL UNMARKED SHARP CORNERS 0.016-0.025
5. NO TOOLING MARKS
6. TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
7. ALL DIMENSIONS ARE IN INCHES.

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Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO19621**

Purchase Order Date 4/18/2013
PO Print Date 4/18/2013

Page Number 1 of 1

Order From :

VC-BON001

SIGNATURE ALUMINUM CANADA INC.
C/O/ T10322C
P.O. BOX 4488, STN A
TORONTO, ON M5W 4H1
CA

Contact Name

Vendor Phone 905-427-6550

Vendor Fax 905-427-2246

Vendor Account Nbr

Buyer

Brigitte Golden

Requisition Nbr

Tax Resale Nbr

10127-2607

Terms

Net 30

Currency

CAD

FOB

Destination-Collect

Ship To :

DART AEROSPACE LTD 1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA

FAXED
C 4/13/13

| Line Nbr | Reference Revision ID Vendor Part Number | Description/ Mfg ID | Req Date/ Taxable | Req Qty/ Unit of Measure | Ship Method | Unit Price | Extended Price |
|----------|--|------------------------|----------------------|-----------------------------|-------------|------------|-------------------|
| 1 | D2962-190P | Extrusion | 5/6/2013 Yes | 55.00 Each | | \$63.0440 | \$3,467.42 |

Special Inst: As per DWG: D2962
MAT: 6061-6T (QQ-A-200/8)
MIN. YIELD TENSILE STRENGTH= 35KSI
MIN. ULTIMATE TENSILE
STRENGTH=40KSI
MIN. ELONGATION =8%
BON L. Tool # DAA-3 (897127)

PO Total:

\$3,467.42

No substitution or deviation without
consent.
Certificate of Conformity or Material
Certification required - YES - NO

Change Nbr: 3

Change Date: 4/18/2013



SIGNATURE ALUMINUM CANADA

1850 CLEMENTS RD
PICKERING, ON L1W 3R8

CERTIFICATE OF COMPLIANCE

| | | | |
|------------|---------|--------|----------|
| 04/24/2013 | 5302427 | 109629 | 1 |
| PO19538 | 010201 | 822306 | 04/27/13 |

46024
DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

46024
DART AEROSPACE LTD.
1270 ABERDEEN ST.
HAWKESBURY, ON K6A 1K7
CANADA

| | | | |
|---------------|------------------------------|-------------------|-------------|
| 001 | DAA-897105-2 | 190" Mill 6061 T6 | D2500-1-190 |
| Gross Wt | 2,575 LBS | | |
| Net Gt | 2,476 LBS | 96 PCS | 5 PKGS |
| Specification | AMS QQA 200/9 + ASTM B221-08 | | |

Mechanical Tests:

| | | | | |
|--------------|--------------|--------------|--------------|-----|
| Tensile | Yield | % Elongation | Conductivity | HRE |
| MPA / KSI | MPA / KSI | | | |
| 291.8 / 42.3 | 260.0 / 37.7 | 9.1 | N/A | 91 |

Chemical Analysis:

| | | | | | | | | |
|------|------|------|------|------|------|------|------|------|
| SI | FE | CU | MN | MG | CR | ZN | TI | V |
| 0.61 | 0.29 | 0.22 | 0.08 | 0.87 | 0.07 | 0.05 | 0.02 | 0.01 |

S 13/10/30

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta, Director of Quality Signature Aluminum Canada Inc

**SIGNATURE ALUMINUM CANADA**1850 CLEMENTS RD
PICKERING, ON L1W 3R8**CERTIFICATE OF COMPLIANCE**

| | | | | |
|---|-----------|---|---------------------------|----------|
| 04/26/2013 | | 5302562 | 109728 | 1 |
| PO19621 | | 010201 | 822524 | 04/27/13 |
| 46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA | | 46024 DART AEROSPACE LTD. 1270 ABERDEEN ST. HAWKESBURY, ON K6A 1K7 CANADA | | |
| 001 | DAA-3-3 | 190" MILL 6061 T6 | D2962-190P 190"MILL6061T6 | |
| Gross | 1,360 LBS | | | |
| Net | 1,314 LBS | 66 PCS | 3 PKGS | |
| AMS QQA 200/9 + ASTM B221-08 | | | | |

Mechanical Tests:

| Tensile | Yield | % Elongation | Conductivity | HRE |
|------------------|------------------|--------------|--------------|-----|
| <u>MPA / KSI</u> | <u>MPA / KSI</u> | | | |
| 295.9 / 42.9 | 264.9 / 38.4 | 10.0 | N/A | 91 |

Chemical Analysis:

| <u>SI</u> | <u>FE</u> | <u>CU</u> | <u>MN</u> | <u>MG</u> | <u>CR</u> | <u>ZN</u> | <u>TI</u> | <u>V</u> |
|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| 0.62 | 0.19 | 0.21 | 0.04 | 0.88 | 0.05 | 0.09 | 0.01 | 0.01 |

This will certify that the material described herein has been inspected and tested in accordance with Signature Aluminum Canada's standard sampling and testing procedures or in accordance with the requirements of any specification forming a part of the material description to the extent indicated herein. Data of chemical composition for the material and test results from samples representative of the material are set forth above hereof or in any attachments hereto. This information shows that the material meets the applicable requirements. Inspection and test records are maintained on file. This certificate shall be deemed apart of and subject to the terms and conditions of warranty set forth on the reverse side of our order acknowledgement form. No other warranties are applicable.

S. Mazzotta, Director of Quality Signature Aluminum Canada Inc

